List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A measuring arrangement comprising: a measuring instrument and a higher-order unit, said measuring instrument and said higher-order unit being electrically connected with each other by a first pair of lines and a second pair of lines, wherein during operation a signal current flows via said first pair of lines and a supply current flows via said second pair of lines, said signal current representing an instantaneous measured value, and said supply current and at least a portion of the signal current supply said measuring instrument.

2. (Currently Amended) The measuring arrangement as claimed in claim 1, wherein the supply current varies in accordance with a current power demand of said measuring instrument.

3. (Currently Amended) The measuring arrangement as claimed in claim 1, wherein the higher order unit comprises at least two transmitter feed units, each of said transmitter feed units being operable to supply a conventional two-wire measuring instrument with electrical power.

4. (Currently Amended) The measuring arrangement as claimed in claim 3, wherein each of said first and said second pairs of lines is connected, respectively, with one of said at least two transmitter feed units.

5. (Currently Amended) The measuring arrangement as claimed in claim 3, wherein each of said at least two transmitter feed units is connected with one of said first and said second pairs of lines, respectively.

6. (Currently Amended) The measuring arrangement as claimed in claim 1, wherein each of said first and said second pairs of lines is connected to a ~~current/voltage~~ current-voltage limiter.

7. (Currently Amended) The measuring arrangement as claimed in claim 1, wherein said first and said second pairs of lines are galvanic isolated from each other.

8. (Currently Amended) The measuring arrangement as claimed in claim 1, wherein the measuring instrument comprises a sensor for detecting at least one physical variable.

9. (Currently Amended) The measuring arrangement as claimed in claim 8, wherein the higher-order unit comprises a bus line for transmitting measured values representing said at least one physical variable.

10. (Currently Amended) An electrically powered measuring device, ~~wherein~~ comprising: two ports ~~are provided constituting~~ that constitutes a two-wire interface ~~for~~ ; and at least one additional port for connecting a second cable, wherein:

said two-wire interface connecting a dual-conductor cable to the electrically powered measuring device, by way of which electric power is fed to the electrically powered measuring device; ~~and~~

a measuring signal from the electrically powered measuring device is transmitted; ~~wherein at least one additional port is provided for connecting a second cable~~ and ~~wherein the~~

said second cable allows the feeding of additional electric power to the electrically powered measuring device.

11. (Currently Amended)) The electrically powered measuring device as ~~In claim~~ claimed in claim 10, wherein said at least one additional port comprises two further ports, constituting a second two-wire interface for connecting a second

dual-conductor cable.

12. (Previously presented) The electrically powered measuring device as in claim 11, wherein the current emanating from the first two-wire interface and/or the current emanating from the second two-wire interface is limited.

Claims 13 - 18 (Cancelled).

19. (Previously presented) A measuring instrument for use with a higher-order unit comprising a plurality of conventional signal/supply terminal pairs, comprising:

first electronics operable to be powered via a first pair of lines coupled to a first terminal pair of said plurality of conventional signal/supply terminal pairs;

a first controllable current source coupled to and controlled by said first electronics, said first controllable current source operable to generate a supply current upon said first pair of lines that is less than or equal to a maximum current, that is greater than or equal to a minimum current, and that provides said first electronics with a desired operating current;

second electronics operable to be powered via a second pair of lines coupled to a second terminal pair of said plurality of conventional signal/supply terminal pairs;

a sensor coupled to said second electronics and operable to obtain a measured value and register said measured value with said second electronics; and

a second controllable current source coupled to and controlled by said second electronics, said second controllable current source operable to generate a signal current upon said second pair of lines that is less than or equal to said maximum current, that is greater than or equal to said minimum current, and that is representative of said measured value.

20. (Previously presented) The measuring circuit of claim 19, further comprising:

a first current limiter coupled to said first pair of lines and operable to protect said

first electronics from excessively high current; and

a second current limiter coupled to said second pair of lines and operable to protect said first electronics from excessively high current.

21. (Previously presented) The measuring circuit of claim 20, wherein:

said first current limiter comprises a first fuse, and

said second current limiter comprises a second fuse.

22. (Previously presented) The measuring circuit of claim 19, further comprising:

a first voltage limiter coupled to said first pair of lines and operable to protect said first electronics from excessively high voltage; and

a second voltage limiter coupled to said second pair of lines and operable to protect said second electronics from excessively high voltage.

23. (Previously presented) The measuring circuit of claim 22, wherein:

said first voltage limiter comprises a Zener diode operably coupled between the first pair of lines, said Zener diode operable to limit voltage developed across the first pair of lines,

said first voltage limiter comprises a Zener diode operably coupled between the first pair of lines, said Zener diode operable to limit voltage developed across the first pair of lines.

24. (Previously presented) The measuring circuit of claim 19, further comprising:

a first current/voltage limiter coupled to said first pair of lines and operable to protect said first electronics from excessively high current and excessively high voltage; and

a second current/voltage limiter coupled to said second pair of lines and operable to protect said second electronics from excessively high current and excessively high

voltage.

25. (Previously presented) The measuring circuit of claim 19, wherein:

said first electronics is connect to said second electronics via galvanic isolation across which information between said first electronics and said second electronics may be exchanged.

26. (Previously presented) The measuring circuit of claim 19, further comprising:

an optocoupler that connects said first electronics to said second electronics across which information between said first electronics and said second electronics may be exchanged in a galvanically isolated manner.

27. (Previously presented) The measuring circuit of claim 19, further comprising a transformer operable to be powered by said second pair of lines, said transformer comprising

a first output coupled to said first electronics in order to supply said first electronics with electrical power, and

a second output to said second electronics and said sensor in order to supply said second electronics and said sensor with electrical power.

28. (Previously presented) The measuring circuit of claim 19, further comprising

at least one peripheral device coupled to and powered via said first electronics, said at least one peripheral device selected from the peripheral device group consisting of a display, an operating panel, and a programming interface.

29. (Previously presented) A measuring arrangement, comprising

a first plurality of terminal pairs,

a first plurality of feed units coupled said first plurality of terminal pairs, each feed

unit of said first plurality of feed units operable to

supply to its respective terminal part of said first plurality of terminal pairs with a given voltage and a controllable current that is greater than or equal to a minimum current and that is less than or equal to a maximum current, register a current flowing through its respective terminal pair, and

generate an output signal that corresponds to its respective registered current;

a first measuring instrument coupled to a first terminal pair of said first plurality of terminal pairs via a first pair of lines and a second terminal pair of said first plurality of terminal pairs via a second pair of lines, said first measuring instrument powered via said first pair of lines and said second pair of lines and operable to obtain a first measured value, and cause a first signal current supplied via said second terminal pair of said first plurality of terminal pairs to be representative of said first measured value; and an intelligent core coupled to said first plurality of feed units and operable to monitor said output signals of said first plurality of feed units and perform operations that are triggered by said output signals of said first plurality of feed units.

30. (Previously presented) The measuring arrangement of claim 29, wherein said first measuring instrument comprises

first electronics powered by a first supply current supplied by said first terminal pair of said first plurality of terminal pairs, and

second electronics powered by said first signal current.

31. (Previously presented) The measuring arrangement of claim 20, wherein said first electronics is further operable to cause said first supply current to have a current level required by said first electronics.

32. (Previously presented) The measuring arrangement of claim 19, further comprising

a second plurality of terminal pairs,

a second plurality of feed units coupled to said second plurality of terminals,

each feed unit of said second plurality of feed units operable to supply to its respective terminal pair of said second plurality of terminal pairs with said given voltage and a controllable current that is greater than or equal to said minimum current and that is less than or equal to said maximum current, register a current flowing through its respective terminal pair, and generate an output signal that corresponds to its respective registered current;

a second measuring instrument coupled to a first terminal pair of said second plurality of terminals via a third pair of lines and a second terminal pair of said second plurality of terminals via a fourth pair of lines, said second measuring instrument powered via said third pair of lines and said fourth pair of lines and operable to obtain a second measured value, and cause a second signal current supplied via said second pair of terminals of said second plurality of terminals to be representative of said second measured value;

a first bus access circuit coupled to a bus line and said first plurality of feed units, said first bus access circuit operable to transmit said output signals of said first plurality of feed units over said bus line;

a second bus access circuit coupled to said bus line and said second plurality of feed units, said second bus access circuit operable to transmit said output signals, of said second plurality of feed units over said bus line, wherein

said intelligent core is coupled to said first plurality of feed units via said bus line and said first bus access circuit, is coupled to said second plurality of feed units via said bus line and said second bus access circuit, and is further operable to monitor said output signals of said second plurality of feed units and perform operations that are triggered by said output signals of both said first plurality of feed units and said second plurality of feed units.

33. (Previously presented) A method of operating a measuring instrument, comprising the steps:

powering the measuring instrument via a first pair of lines with a supply current that is greater than or equal to a minimum signal current and less than or equal to a

maximum signal current;

powering the measuring instrument via a second pair of lines with a signal current that is greater than or equal to the minimum signal current and less than or equal to the maximum signal current; and

controlling the signal current such that the signal current is representative of a measured value.

34. (Previously presented) The method of claim 33 wherein:

the step of powering the measuring instrument via the first pair of lines comprises the step of applying a first voltage to said first pair of lines, and

the step of powering the measuring instrument via the second pair of lines comprises the step of applying the first voltage to said second pair of lines.

35. (Previously presented) The method of claim 33, wherein:

the step of powering the measuring instrument via the first pair of lines comprises the step of powering first electronics of the measuring instrument by applying a first voltage to said first pair of lines, and

the step of powering the measuring instrument via the second pair of lines comprises the step of powering second electronics of the measuring instrument by applying the first voltage to said second pair of lines.

36. (Previously presented) The method of claim 35, wherein the step of controlling the first current comprises the steps of:

registering the measured value with the second electronics of the measurement instrument, and

generating the signal current based upon the measured value registered with the first electronics.

37. (Previously presented) The method of claim 33, wherein:

the step of powering the measuring instrument via the first pair of lines comprises

the step of powering first electronics of the measuring instrument by applying a first voltage to said first pair of lines, and

the step of powering the measuring instrument via the second pair of lines comprises the step of powering second electronics of the measuring instrument that arc galvanically isolated from the first electronics of the measuring instrument by applying the first voltage to said second pair of lines.

38. (Previously presented) The method of claim 33, wherein:

the step of powering the measuring instrument via the second pair of lines comprises the steps of powering first electronics of the measuring instrument by applying a first voltage to said second pair of lines, and powering second electronics of the measuring instrument that are galvanically isolated from the first electronics of the measuring instrument by applying the first voltage to said second pair of lines, and

the step of powering the measuring instrument via the first pair of lines comprises the step of further powering the first electronics of the measuring instrument by applying the first voltage to said first pair of lines.

39. (Previously presented) The method of claim 38, wherein the step of controlling the first current comprises the steps of:

registering the measured value with the second electronics of the measurement instrument, and

causing a controllable current source connected to the second pair of lines to generate the signal current based upon the measured value registered with the second electronics.